Abstract Submitted
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The new digital data acquisition system for Gammasphere M.P. CARPENTER, M. ALBERS, J.T. ANDERSON, A. AYANGEAKAA, H.M. DAVID, C.R. HOFFMAN, R.V.F. JANSSENS, T. LAURITSEN, T. MADDEN, M. OBERLING, D. SEWERYNIAK, P. WILT, S. ZHU, Argonne National Laboratory — A new digital-based data acquisition system (DAQ) for Gammasphere has been developed. This system leverages the electronics designed for the GRETINA collaboration. At the center of this development are the GRETINA 10-channel digitizer modules which handle the Ge preamp signals at a 100MHz rate, and master trigger and router modules which allow triggers to be constructed from information obtained from the digitizer channels [1]. The new DAQ increases event throughput significantly over the existing system while addressing multiple repair and maintenance issues. New hardware and firmware to integrate the DAQ with Gammasphere and its suite of ancillary detectors has been developed allowing for a seamless changeover from the analog DAQ to the new digital system. An overview of the system and illustrative results from several recent experiments will be presented. This material is based on work supported by the DOE, Office of Science, Office of Nuclear Physics under Contract No. DE-AC02-06CH11357.

[1] J.T. Anderson et al., IEEE Transactions on Nuclear Science, vol. 56, issue 1, pp. 258-265.

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